

## Remarks

Claims 1-8, 11 and 12 are pending and are under consideration.

Claims 1-8, 11 and 12 are rejected under 35 USC 103(a) as being unpatentable over Lacroix, et al., U.S. Pat. No. 4,111,650 in view of Pedrazzi, U.S. Pat. No. 5,665,871.

Applicants respectfully rebut these rejections.

Lacroix (Abstract) discloses:

15-50% by weight a dye of the formula  $\text{CuPc} [\text{SO}_2\text{NH}(\text{CH}_2)_3\text{N}(\text{CH}_3)_2]_{2 \text{ to } 3} [\text{SO}_3\text{H}]_{1 \text{ to } 2}$

30-65% by weight water

5-15% by weight N-methylpyrrolidone

1-7% by weight benzyl alcohol and

1-5% by weight of a lower aliphatic carboxylic acid.

Lacroix does not teach  $\epsilon$ -caprolactam.

Pedrazzi is cited as teaching the equivalence of  $\epsilon$ -caprolactam and N-methyl-2-pyrrolidone.

Pedrazzi teaches mixtures of one more copper phthalocyanine dyes together with one or more poly azo dyes and storage stable formulations thereof (Abstract). The formulations are obtained by desalinating aqueous solutions of the mixtures by a membrane process, col. 3, lines 56-64.

Preferably, (col. 4, lines 36-49) these formulations are free from solubility improving additives, although a number, including both  $\epsilon$ -caprolactam and N-methyl pyrrolidone are disclosed. Applicants submit that such a disclosure does not fairly suggest the use of  $\epsilon$ -caprolactam since it appears that it is not desirable. Pedrazzi rather teaches away from using  $\epsilon$ -caprolactam.

Applicants submit that one skilled in the art would not be motivated to replace N-methyl pyrrolidone of Lacroix with  $\epsilon$ -caprolactam from the combined disclosure of Lacroix and Pedrazzi.

Pedrazzi is also cited as teaching aluminum sulphate, col. 5, lines 5-15. Applicants submit that Pedrazzi discloses the use of aluminum sulphate as a sizing agent during the dying of paper and not as a component in the storage stable formulation.

Claims 1-8, 11 and 12 are rejected under 35 USC 103(a) as being unpatentable over Lacroix in view of Wunderlich, U.S. Pat. No. 5,489,330.

Applicants respectfully rebut these rejections.

Wunderlich teaches stable concentrated aqueous solutions of dyes similar to those of the instant invention, which is achieved by adjusting the pH of the solutions to within a defined range, col. 1, lines 26-48. Wunderlich teaches that "organic additives which improve solubility can usually be dispensed with entirely", col. 3, lines 4-6. Possible organic additives which improve solubility include  $\epsilon$ -caprolactam and N-methyl-2-pyrrolidone, col. 3, lines 35-48. Applicants submit that Wunderlich likewise does not fairly suggest the use of  $\epsilon$ -caprolactam. Wunderlich also rather teaches away from its use.

Applicants submit that one skilled in the art would not be motivated to replace N-methyl pyrrolidone of Lacroix with  $\epsilon$ -caprolactam from the combined disclosure of Lacroix and Wunderlich.

Wunderlich also teaches sizing agents such as aluminum sulphates, col. 4, lines 28-29. Aluminum sulfate is not taught as a component in the stable aqueous solution.

To further support the non-obviousness of the present invention, Applicants submit herewith a Rule 132 Declaration by Dr. Adolf Kaeser. In the Kaeser Declaration, a formulation (A) containing present  $\epsilon$ -caprolactam is compared to a prior art formulation (B) containing N-methyl pyrrolidone. The viscosities of the two formulations are measured at 5°C and 25°C. Formulation (A) exhibits significantly lower viscosity. This improved lower viscosity is surprising and of considerable importance in a paper making process due to improved pumpability of the dye solutions. This is mentioned on page 1, paragraph 4 of the disclosure.

This viscosity improvement could not have been foreseen based on the disclosure of the cited documents.

The Kaeser Declaration is unsigned. A complete signed version will be forwarded to the PTO shortly.

In view of the results of the Kaeser Declaration and the above remarks, Applicants submit that the 35 USC 103(a) rejections are addressed and are overcome.

The Examiner is kindly requested to reconsider and to withdraw the present rejections.

Applicants submit that the present claims are in condition for allowance and respectfully request that they be found allowable.

Ciba Corporation  
540 White Plains Road  
P.O. Box 2005  
Tarrytown, NY 10591-9005  
Tel. (914)785-2783  
Fax (914)785-7102

Respectfully submitted,



Tyler A. Stevenson  
Agent for Applicants  
Reg. No. 46,388

Attachment: Rule 132 Declaration (Dr. Kaeser, unsigned)